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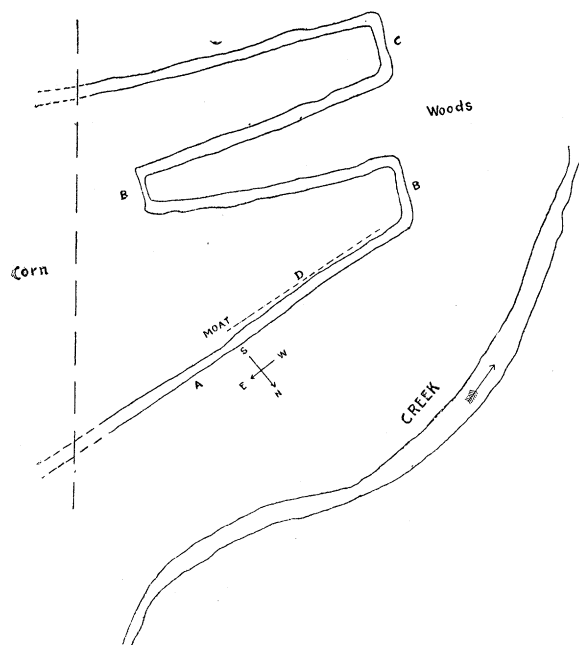
values as they are commonly considered to be. As, for example, the amount of the changes in the length of a chain under the influences of changing temperatures is related to the length of the chain, so we should expect the variability in the growth of large organisms to be on a larger scale than in small ones. There are more cells affected simultaneously by the same enviroing conditions. The rationale of a connection between the variability and the median may in some cases admit of being clearly made out, and in all cases it deserves more thought than it has hitherto received.

AN ARCHÆOLOGICAL DELUSION.

BY THOMAS GORDON KING.

THE daily papers have lately published accounts of a new "serpent" effigy. It existed in southern Ohio, in Warren County, and, according to two doctors of the neighborhood, measured some nineteen hundred feet in length. It was said to surpass the famous Adams County serpent.

Professor Putnam's assistant, Mr. H. I. Smith, spent some time surveying the structure, this summer. He trenched the embank-



ment in several places and searched the neighboring fields for traces of a village site. The accompanying rough outline gives an idea of the "serpent" so far as it can be traced. In the corn-field it will be seen that the embankment cannot be distinguished; in the woods it is plain. The part in the woods, which at present is some two feet in height, does not appear to be serpentine in character. It is almost unnecessary to add that if the remaining part of the structure does not represent a serpent, the obliterated portion never did. There is not the slightest grounds for the assumption that this figure in any way resembles the Adams County effigy. The latter is laid out in graceful curves, which suggest the character of the effigy. The embankments of the Warren County structure resemble those of Fort Ancient. The long straight line A, and the sharp, squared bends B and C are the exact counterpart (although much smaller) of certain parts of south Fort Ancient.

A live snake could not take the form of this "new serpent" without breaking his back in three places. (I write under the impression that aborigines imitate living and not dead animals). There is a slight moat at the base of the embankment, which, although nearly filled, can still be traced. To one who has seen all the shell, bone, stone, and clay representatives of serpents and serpent-symbols displayed in the museums of this country, the "new serpent" does not appear serpentine. I cannot see how the angular

corners B and C and the moat D, and the embankment A, mark other than parts of a peculiar defensive earthwork.

The primitive Americans in drawing, moulding, building, or sculpturing snakes evinced a certain similarity of idea in design, and employed a common mode of execution. Yet this "new serpent" has nothing in common with other serpents! (Read Holmes on "Art in Shell.") As this new serpent is such a poor representative that Professor Putnam and other competent judges dare not place themselves on record in naming it, I have no hesitancy in calling it a rude fortification. The native Americans were sufficiently competent to execute a figure with such distinctness and closeness of resemblance as would allow of no dispute. Those who are interested in following the discussion further will please compare the diagram submitted with Squier and Davis's plan of the Adams County effigy. There are many similar combination works in the Ohio Valley, and it is probable that the thorough exploration of several might furnish evidence as to the purpose for which they were erected.

LETTERS TO THE EDITOR.

Man and the Glacial Period.

I ACKNOWLEDGE with pleasure the courtesy with which Dr. Brinton, in his review of "Man and the Glacial Period," has dealt with the question of the genuineness of the reported discoveries of implements in the glacial gravels of the United States. This, of course, was the first question to be settled, Were implements of human manufacture really found in undisturbed strata of gravel which was deposited during the glacial period? If this question is settled in the affirmative, then all glacial geology has direct bearing upon the question of archæology. If it is decided in the negative, glacial geology remains the same, but it ceases to have interest in connection with archæology. I am glad to have the issue so clearly made by Dr. Brinton, and thereby to have occasion to present more specifically my reasons for belief in the genuineness of these discoveries.

The evidence naturally begins with that at Trenton, N. J., where Dr. C. C. Abbott has been so long at work. Dr. Abbott, it is true, is not a professional geologist, but his familiarity with the gravel at Trenton where he resides, the exceptional opportunities afforded to him for investigation, and the frequent visits of geologists have made him an expert whose opinion is of the highest value upon the question of the undisturbed character of the gravel deposit. The gravel banks which he has examined so long and so carefully have been exposed in two ways: 1st, by the undermining of floods on the river side, but principally by the excavations which have been made by the railroad and by private parties in search of gravel. For years the railroads have been at work digging away the side of the banks until they had removed a great many acres of the gravel to a depth of twenty or twenty-five feet. Anyone can see that in such conditions there has been no chance for "creep" or landslides to have disturbed the stratification; for the whole area was full of gravel, and there was no chance of disturbance by natural causes. Now Dr. Abbott's testimony is that up to the year 1888 sixty of the four hundred palæolithic implements which he had found at Trenton had been found at recorded depths in the gravel. Coming down to specifications, he describes in his reports the discovery of one (see "Primitive Industry," 492) found while watching the progress of an extensive excavation in Centre Street, which was nearly seven feet below the surface, surrounded by a mass of large cobble stones and boulders, one of the latter overlying it. Another was found at the bluff at Trenton, in a narrow gorge where the material forming the sides of the chasm had not been displaced, under a large boulder nine feet below the surface (ib. 496). Another was found in a perpendicular exposure of the bluff immediately after the detachment of a large mass of material, and in a surface that had but the day before been exposed, and had not yet begun to crumble. The specimen was twenty-one feet from the surface of the ground.

In all these and numerous other cases Dr. Abbott's attention was specially directed to the question of the undisturbed char-